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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,954	04/07/2006	Toshikazu Suganuma	80360(47762)	7305

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EDWARDS ANGELL PALMER & DODGE LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER	
CHAUDRY, ATIF H	
ART UNIT	PAPER NUMBER
3753	
MAIL DATE	DELIVERY MODE
08/05/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,954	SUGANUMA ET AL.	
	Examiner	Art Unit	
	ATIF H. CHAUDRY	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6-8,10 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-8,10 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/13/2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3, 4, 6-8, and 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghate (US Patent 5016817) in view of Laverdiere (US PG Pub 20050173003) further in view of Shirakashi (US PG Pub 20040206634).

5. Ghate (Fig. 2, 4) discloses a liquid supply apparatus for and illustrates a method of supplying an additive liquid to a primary fluid comprising of a supply section having a supply liquid tube 154, and primary section comprising a primary circulation tube 98. In operation, the supply section fluid must inherently have larger pressure than the primary section in order to inject the additive liquid into the primary fluid. Ghate discloses pressure regulators 90 and 94 to regulate the pressure of the supply section and primary fluid section. Ghate (column 3 line 10) discloses the diameter of the supply section tube at .75 mm. Ghate fails to disclose a hollow fiber shape circulation tube as pressure/flow regulators. Laverdiere (page 7, 2nd column, lines 30-35) teaches a fluid flow controller using hollow fiber tube to regulate pressure drops and thus control the flow rate. It would have been obvious to a person of ordinary skill in the art to have provided the mixing device disclosed by Ghate with hollow fiber tube as taught by Laverdiere as alternative pressure/flow control means. Ghate fails to disclose ultrapure water or electrolytic solution. Shirakashi (page 1, para006; page 10 para 119) teaches a method of reducing dielectric breakdown in chemical-mechanical polishing caused by ultrapure water cleaning by mixing of electrolytic solutions with ultrapure water in order to reduce the specific resistance of ultrapure water. It would have been obvious in view of Shirakashi to use the Ghate system to mix electrolytic solution and ultrapure water. Ghate fails to disclose optimum ranges of flow rate, concentration ratio, or pressure

ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the claimed optimum ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233

6. Claims 1, 3, 4, 6-8, and 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghate (US Patent 5016817) in view of Kumano et al. (US PG Pub 20060144777) further in view of Shirakashi (US PG Pub 20040206634).

7. Ghate (Fig. 2, 4) discloses a liquid supply apparatus for and illustrates a method of supplying an additive liquid to a primary fluid comprising of a supply section having a supply liquid tube 154, and primary section comprising a primary circulation tube 98. In operation, the supply section fluid must inherently have larger pressure than the primary section in order to inject the additive liquid into the primary fluid. Ghate discloses pressure regulators 90 and 94 to regulate the pressure of the supply section and primary fluid section. Ghate (column 3 line 10) discloses the diameter of the supply section tube at .75 mm. Ghate fails to disclose a hollow fiber shape circulation tube. Kumano et al. (page 5, para 47) teaches using hollow fibers for optimizing pressure in fluid flow. It would have been obvious to a person of ordinary skill in the art to have provided the mixing device disclosed by Ghate with hollow fiber material for tubing as taught by Kumano et al. in order to provide a convenient method of pressure and flow control. Ghate fails to disclose ultrapure water or electrolytic solution. Shirakashi (page 1, para006; page 10 para 119) teaches a method of reducing dielectric breakdown in

chemical-mechanical polishing caused by ultrapure water cleaning by mixing of electrolytic solutions with ultrapure water in order to reduce the specific resistance of ultrapure water. It would have been obvious in view of Shirakashi to use the Ghate system to mix electrolytic solution and ultrapure water. Ghate fails to disclose optimum ranges of flow rate, concentration ratio, or pressure ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the claimed optimum ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233

Response to Arguments

8. Applicant's arguments filed 07/13/09 have been fully considered but they are not persuasive.

9. Applicants argument that "in the liquid supply method of Laverdiere, the concentration of the liquid mixture is controlled by a feedback control method" is not persuasive since Laverdiere has been cited merely to show incorporation of hollow fiber tubing as an additional or alternative pressure/flow control method since using controlling pressure drop across hollow fiber tubes is well known as taught by Kumano et al. (page 5, para 47).

10. Applicants arguments that "the Laverdiere reference merely discloses a method of controlling the amount of liquid, but does not disclose a method of supplying and mixing a supply liquid to a primary fluid" is not persuasive since Ghate is being relied upon to show supplying and mixing a supply liquid to a primary fluid and Laverdiere is

being cited only to show incorporation of hollow fiber tubes to control pressure drop in the fluid (even though the claims do not recite determining the supply quantity, it is noted that using pressure drop to control flow rate is well known in the art), it would have been obvious to a person having ordinary skill in the art to have used the hollow fiber tubing as an additional or alternative pressure/flow control method since using controlling pressure drop across hollow fiber tubes is well known as taught by Laverdiere (page 7, 2nd column, lines 30-35).

11. Applicant's argument that Laverdiere does not teach a method of producing an electrolyte is not persuasive since Shirakashi is being relied upon to show prior art disclosure of providing an electrolyte.

12. Applicants argument that "in the liquid supply method of Laverdiere, the concentration of the liquid mixture is controlled by a feedback control method" is not persuasive since Laverdiere has been cited merely to show incorporation of hollow fiber tubing as an additional or alternative pressure/flow control method since using controlling pressure drop across hollow fiber tubes is well known as taught by Kumano et al. (page 5, para 47).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATIF H. CHAUDRY whose telephone number is (571)270-3768. The examiner can normally be reached on Mon-Fri Alternate Friday off 9-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571)272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Atif H Chaudry/
Examiner, Art Unit 3753

7/27/2009

/Robin O. Evans/
Supervisory Patent Examiner, Art Unit 3753